



Economic and Social Commission for Asia and the Pacific**Seventy-fifth session**

Bangkok, 27–31 May 2019

Item 4 (i) of the provisional agenda*

Review of the implementation of the 2030 Agenda for Sustainable Development in Asia and the Pacific: information and communications technology, science, technology and innovation**Report of the Governing Council of the Asian and Pacific Centre for Transfer of Technology on its fourteenth session***Summary*

The fourteenth session of the Governing Council of the Asian and Pacific Centre for Transfer of Technology was held in Bangkok on 28 and 29 November 2018. The session was hosted by the Ministry of Science and Technology of Thailand and the Thailand Institute of Scientific and Technological Research.

During the fourteenth session, the Council reviewed the activities carried out and the results achieved by the Centre during the period December 2017 to November 2018. Member States made requests for the Centre's support and presented concrete proposals for joint activities for 2019. The Council endorsed the Centre's proposed programme of work for 2019.

The Council took note of the draft report on the evaluation of the Centre prepared by an independent external consultant. The report concluded that the Centre's objectives and outputs were very relevant to the priorities and requirements of member States; that the Centre delivered its capacity-building activities efficiently; but that, however, owing to severe financial and human resource limitations, the effective operation of the Centre could not be sustained.

The Council called upon member States to consider enhancing voluntary contributions to the Centre. It also invited non-contributing Governing Council members to consider providing voluntary contributions so that the Centre could continue assisting member States in their efforts to achieve the Sustainable Development Goals through capacity-building activities in mandated areas more efficiently.

I. Matters calling for action by the Commission or brought to its attention

1. The following decisions adopted by the Governing Council of the Asian and Pacific Centre for Transfer of Technology are brought to the attention of the Economic and Social Commission for Asia and the Pacific (ESCAP):

* ESCAP/75/L.1.

Decision 1

The Governing Council takes note of the cost-cutting efforts made by the Centre over the past 14 years, including the reduction of its staff members from 14 to 6 and the redeployment of the Head of the Centre, under the regular budget, to ESCAP headquarters. The Governing Council notes the current level of human and financial resources of the Centre and suggests to further strengthen the Centre to meet the growing demands of activities to support member States to meet the 2030 Agenda for Sustainable Development.

Decision 2

The Governing Council calls upon Governments of member States to consider enhancing voluntary contributions. It also invites non-contributing Government Council members to consider providing voluntary contributions so that the Centre can continue to assist member States in their efforts to achieve the Sustainable Development Goals through capacity-building activities in mandated areas.

Decision 3

The Governing Council invites member States to consider financing new technical cooperation projects of the Centre or to develop new joint projects, based on country needs for technical cooperation activities.

Decision 4

The Governing Council invites member States to consider contributing national experts to work at the Centre. Such arrangements will enable the experts to benefit from the work experience gained at the Centre and, at the same time, they will ease the current human resource constraints faced by the Centre.

Decision 5

The Governing Council requests the secretariat to continue to engage in bilateral discussions with the Government of India to amicably resolve the issue of the host country agreement and funding required for internationally recruited staff. It also requests the secretariat to report on the results of the discussion to the Governing Council at its fifteenth session.

Decision 6

The Governing Council requests the secretariat to reach out to various stakeholders to further strengthen the Centre and report on those activities during the fifteenth session of Governing Council.

Decision 7

The Governing Council adopts the programme of work of the Centre for 2019 as presented in document ESCAP/APCTT/GC/2018/3.

Decision 8

The Governing Council requests the Centre to continue to organize demand-driven capacity-building activities in the areas of science, technology and innovation policy; new and emerging technologies, such as nanotechnology, water resource and renewable energy technologies, information and communications technologies and technologies related to the Internet of things;

and support to technology-based start-ups and small and medium-sized enterprises.

Decision 9

The Governing Council encourages the secretariat to take into account the discussions and recommendations of the International Conference on Inclusive Science, Technology and Innovation Policies for Promoting the Transfer of New and Emerging Technologies in Water and Energy Sectors, held in Bangkok on 27 November 2018, when developing its future work plans in support of sustainable development.

Decision 10

The Governing Council welcomes with appreciation the offer made by the Government of Malaysia to host the fifteenth session of the Governing Council in the first week of November 2019.

II. Proceedings

A. Report on the activities of the Centre during the period December 2017 to November 2018

(Agenda item 2)

2. The Council had before it the report on the activities of the Centre during the period December 2017 to November 2018 (ESCAP/APCTT/GC/2018/1).

3. The Council noted with appreciation the accomplishments of the Centre in terms of the range and quality of the delivered work. The Centre successfully delivered demand-driven capacity-building activities in such areas as science, technology and innovation policymaking; technology transfer and commercialization; new and emerging technologies, such as information and communications technology and the Internet of things, renewable energy and water-resource management; and support to technology-based start-ups and small and medium-sized enterprises.

B. Report on the administrative and financial status of the Centre, including resource mobilization for upcoming projects/activities

(Agenda item 3)

4. The Council had before it the report on the administrative and financial status of the Centre for the period January to September 2018 (ESCAP/APCTT/GC/2018/2).

5. The Council took note of the report on the status of the Centre's financial resources. It expressed its appreciation to the member States that provided annual voluntary contributions to the Centre, which enabled the Centre to deliver demand-driven capacity-building activities.

6. The Council took note of the cost-cutting efforts made by the Centre over the past 14 years, including the reduction of its staff members from 14 to 6 and the redeployment of the post of the Head of the Centre, under the regular budget, to ESCAP headquarters. The secretariat expressed concern that the current human and financial resources of the Centre were not at a level required for the Centre to carry out mandated activities nor meet the growing demand for the Centre's activities.

7. In that context, the secretariat informed the Council about the need to secure a minimum number of core professional staff from a stable funding source to ensure uninterrupted operation of the Centre.

8. The Council called upon Governments of member States to consider enhancing voluntary contributions. It also invited non-contributing Council members to consider providing voluntary contributions, so that the Centre could continue to assist member States in their efforts to achieve the Sustainable Development Goals through capacity-building activities in mandated areas.

9. The Council invited member States to consider financing new technical cooperation projects of the Centre or to develop new joint projects, based on country needs for technical cooperation activities.

10. The Council invited member States to consider contributing national experts to work at the Centre. Such arrangements would enable the experts to benefit from the work experience gained at the Centre, and at the same time, they would ease the current human resource constraints faced by the Centre.

11. The representative of the host country, India, recognized the contribution of the work of the Centre. The representative requested further clarification on the long-term vision and programmes of the Centre and the substantial budget enhancement sought by the secretariat for the Centre. The representative emphasized the role of the secretariat regarding resource mobilization under the host country agreement, including the salaries and allowances of internationally recruited staff. The secretariat suggested that the host country and the secretariat find cooperative solutions.

12. The Head of the Centre responded that the Centre should actively support the efforts of member States aimed at achieving the Sustainable Development Goals through technology. The Centre should evolve as a centre of excellence of capacity-building on technology transfer and commercialization with special reference to green technologies, science, technology and innovation policymaking, and extending support to technology-based start-ups and small and medium enterprises, among others.

13. The Council and the secretariat welcomed the intention of the Government of Thailand to provide a technical expert to the Centre.

C. Presentation and discussion on the evaluation of the Centre

(Agenda item 4)

14. The Council had before it the conference room paper containing the draft report on the evaluation of the Centre (ESCAP/APCTT/GC/2018/CRP.1).

15. The Council took note of the draft report on the evaluation of the Centre presented by an independent external consultant, and also noted the effort with appreciation.

16. The evaluation consultant provided an overview of the report. The objectives of the evaluation were to assess the substantive relevance of the Centre's mandate in the context of the ongoing reform of ESCAP and the 2030 Agenda, sustainability of the Centre in terms of its financial and human resources and the results and efficiency of the Centre's delivery of its capacity-building activities and also to recommend specific actions for improving the results-orientation, relevance, sustainability and efficiency of the Centre.

17. The evaluation consultant informed the Council that the conclusions of the evaluation were that the mandate of the Centre remained relevant in the context of the ongoing reform of ESCAP and the 2030 Agenda. The Centre had been delivering capacity-building activities efficiently despite limited financial and human resources. However, given the current severe financial and human resource limitations, effective operations of the Centre could not be sustained.

18. The evaluation consultant put forth several recommendations based on the conclusion of the evaluation report:

(a) The Centre should remain at its present location provided that the host country committed to increase its financial contribution to the Centre, over an agreed period, to a level comparable to that contributed by Governments hosting other ESCAP regional institutions;

(b) Renegotiate the host country agreement to allow the use of funds from the Government of India to recruit international staff through a formal amendment or an exchange of letters, or hold the provision of article XIII, 1 (d) in abeyance through an exchange of letters, whichever was more expedient, to enable the immediate use of the host country's contribution for the salaries and allowances of internationally recruited staff;

(c) Pursue vigorously the implementation of the 2009 Council decision urging member States to increase institutional support to an annual contribution of \$30,000 from developing countries and \$7,000 from least developed countries to enable the Centre to deliver effective services to members and associate members on a sustainable basis;

(d) Strengthen the Centre by providing it with additional professional staff comprising one P-5, one P-4, one P-3, and corresponding technical and support staff;

(e) Endeavour to develop robust multi-stakeholder partnerships and meaningful engagement with the private and non-governmental sectors by, for example, forging linkages and cooperation with various technology transfer networks;

(f) Give greater focus to the Centre's work programme on the transfer, dissemination and diffusion of emerging and environmentally sound technologies to developing countries on favourable terms in delivering capacity development and technical cooperation work.

19. One representative requested further information on what could be the future priority work areas of the Centre. The representative commented on the need for the Centre to focus on facilitating technology transfer activities for its member States and suggested that if there was an increase in human resources, the Centre could strive to expand its objectives accordingly.

20. The evaluation consultant noted that the Council and the Centre could explore ways to increase the capacity of developing countries in the area of technology transfer and, in particular, in implementing green technology transfer activities. The evaluation consultant further suggested that the Centre could explore new ways to partner with the private sector.

21. The Council noted the intervention of the representative of the Government of India on the report by the independent evaluator. The representative made the following comments in response to the report of the evaluator:

(a) The Government of India had welcomed the finding of the evaluation report that the Centre could deliver its capacity-building activities efficiently and that the Centre's mandate remained relevant in the context of the ongoing reform of ESCAP and the 2030 Agenda;

(b) The Government of India had welcomed the evaluation consultant's recommendation that the Centre should remain at its present location, New Delhi;

(c) The Government of India had noted the recommendations on enhancing its annual contribution. The Government had supported the Centre for more than 40 years and had made voluntary contributions in cash and through various facilities. The Government had already conveyed its willingness to consider enhancing its host country contribution. The outcome would be conveyed to the secretariat through a laid down procedure. The Government had raised concerns with regard to the consultant's recommendation on increasing the Government's financial contribution to the Centre to a level comparable to that contributed by Governments hosting other regional institutions as that did not appear reasonable and founded on facts. The Centre's annual spending was within \$300,000 dollars. As per the stakeholder survey in the evaluation report, 80 per cent of respondents from member countries reported that the Centre was sustainable at its current level of human and financial resources. Accordingly, the Government had taken the view that the level of increase in contributions suggested in the report was high;

(d) The Government had noted the recommendation to strengthen the Centre by providing it with additional professional staff comprising one P-5, one P-4, one P-3, and the corresponding technical and support staff. The recommendation to renegotiate the host country agreement to allow the use of funds from the Government of India to recruit international professional staff to enable the immediate use of the host Government contribution for the salaries and allowances of internationally recruited staff was not acceptable because, as per the provisions of article XIII, 1 (d) of the host country agreement, it was the responsibility of the secretariat to fund international staff posts. The suggestion that the Government of India fund the international posts violated the host country agreement. The Government intended to strongly convey that there should not be any dilution in the provisions contained in the host country agreement or of the mandate of the Centre in any form. The Government had disagreed on taking away the P-5 level post in the Centre by the secretariat without transparent consultation. The Government had also disagreed with the recommendation to renegotiate the host country agreement or hold the provisions of article XIII, 1 (d) in abeyance;

(e) The Government had suggested that the Centre should explore various programme-based support activities in line with the Sustainable Development Goals. That, among other efforts, would strengthen the Centre both financially and administratively;

(f) In line with recommendation 5 of the evaluation, the Government had supported private sector and non-governmental organization partnerships with the Centre. However, efforts should be aimed at revenue generation by the Centre for creating corpus funds. The Centre might initiate online courses and other capacity-building programmes, in particular for least developed countries, in collaboration with institutions such as the Indian Institute of Science, the Indian Institute of Technology, the Indian Institute of Management, the Council of Scientific and Industrial Research and the National Research Development Corporation.

22. Providing clarification on some of the points raised by the representative of India, the secretariat informed the Council of the following:

(a) The secretariat would continue to engage in bilateral discussions with the Government of India to amicably resolve the issue of the host country agreement and funding required for internationally recruited staff;

(b) With regard to the spending levels under the host country trust funds of the Centre versus other regional institutes, the current level of \$300,000 for the Centre consisted of general service staff costs and basic operational costs of the office. The levels of expenditures of other regional institutes, however, included costs of professional staff, basic office operational costs and partial funding for substantive activities of the regional institute;

(c) With regard to observation on the lack of transparent consultation on the withdrawal of the P-5 level post at the Centre, the secretariat clarified that the redeployment of the regular budget P-5 posts of regional institutes had been conducted in accordance with established intergovernmental processes. That included discussion and endorsement by the Commission and approval by the Fifth Committee of the General Assembly and the General Assembly;

(d) With regard to the provisions of the host country agreement, article XIII, 1 (d), the Government of India agreed to make an annual contribution towards meeting the expenses of the Centre in an amount which would enable the Centre to meet a part of its institutional costs other than the salaries and allowances of internationally recruited staff. The secretariat also pointed out that in paragraph 4 of article XIII, it was also stated that all expenses of the Centre, including the remuneration of its staff, should be met from voluntary contributions;

(e) The secretariat highlighted the difficulty in finding donors that were able or willing to fund the costs of core professional staff required for the operations of a regional institute. Donors providing extrabudgetary funds for technical cooperation projects often did not approve the use of funds to cover staff costs as they desired that the funds be used for concrete activities on the ground.

23. The Council took note of the external evaluation consultant's report, conclusions, and recommendations and the comments from the member States and the secretariat.

D. Proposed future projects and programme of work for 2019

(Agenda item 5)

24. The Council had before it the draft programme of work for 2019 (ESCAP/APCTT/GC/2018/3).

25. The Council took note of the draft programme of work of the Centre for 2019, comprising four ongoing projects (annex III).

26. Various member States highlighted their priorities related to science, technology and innovation and suggested that the Centre consider implementing the suggested activities subject to their conformity with the mandate of the Centre and the availability of budgetary support.

27. The representative of China stated that the Ministry of Science and Technology of China would seek to jointly host a training workshop with the Centre in 2019 or 2020 on science, technology and innovation policies. The representative informed the Council that the Ministry would further discuss with the Centre the proposal to establish an Asia-Pacific information and

communication technology knowledge network for fourth industrial revolution technologies, which was a key recommendation of the Fourth Industrial Revolution Conference held in Putrajaya, Malaysia, on 23 and 24 October 2018. Furthermore, the representative indicated that the Ministry of Science and Technology would consider sending technical staff to the Centre on secondment.

28. The representative of Indonesia requested the Centre to consider developing programmes to accelerate the facilitation of technology transfer among the member States, such as through technical cooperation, technology-based start-ups and pilot projects, in certain areas pertaining to water and energy, given the availability of resources. The representative proposed to organize the Asia and the Pacific Start-up International Partnership and Technology Transfer Expo 2019 to be held in Indonesia in November. That event would provide the Centre's member States with the opportunity to promote their start-ups, accelerate technology transfer, innovation adoption and adaptation, hi-tech business partnerships, and establish and activate innovation networking in the region. The representative further informed the Centre of his country's interest in hosting the Council session in 2020.

29. One representative requested that the Centre focus its future work on the blue economy and the sustainable use of ocean resources. He stated that his country faced critical problems in the water sector and that there was need to collaborate with member States to address issues related to the water sector. He suggested that joint activities could be organized to promote desalination technology.

30. The representative of Kazakhstan requested the Centre to consider using platforms provided by the Astana International Financial Centre and the Astana Hub, which were launched in 2018 in Astana. Kazakhstan also had the infrastructure (former site of World Expo 2017 "Future Energy") for organizing events by the Centre. The activities of the Centre and the Hub were based on innovative technologies, including fintech and information technologies.

31. The representative of Malaysia informed the Governing Council that the current priorities of his country in the areas of the Centre's mandate of technology transfer focused on the following: (a) energy sustainability, with specific reference to the technology transfer of technologies related to the increasing solar photovoltaic share in the renewable energy mix portion of the electricity grid by 20 per cent in 2025; and (b) environment preservation, which referred to the country's policy to abolish the usage of plastics by 2023. The representative also proposed that his country co-organize various activities with the Centre in 2019. Those activities could comprise workshops and programmes focusing on three areas: (a) sharing of best practices of policy to enable corporate sourcing of renewable energy; (b) sharing of practices related to auctioning of renewable energy; and (c) sharing of success stories of government policy in the region to implement technology transfer with a view to promote the abolition of plastic usage or use of alternative environmentally friendly materials.

32. One representative expressed his Government's interest in participating in the Centre's capacity-building activities in the areas of national innovation system and renewable energy (proposed by the Government of Malaysia). He also expressed his country's support for the suggestion to focus on promoting green technologies to harness the ocean resources.

33. The representative of Thailand noted that the priorities of aligning the Centre's mandate were centred on energy, water and climate change. The representative suggested that the Centre expand its work on sustainable production and consumption (Sustainable Development Goal 12), climate

change (Sustainable Development Goal 13), and biocircular and green economy. The representative requested the Centre to provide advice on and support the activities of the ASEAN Network of Centre of Excellence in Biomass Conversion Technology. The representative also highlighted that the Thailand Institute of Scientific and Technological Research and the Ministry of Science and Technology of Thailand would like to jointly organize a workshop on intellectual property management and technology licensing with the Centre in May 2019.

34. One country representative recognized that the Centre's activities, including those related to knowledge-sharing and capacity-building, were relevant to the needs of the member States. The representative suggested that the Centre strive for concrete and tangible performance results, such as the number of cases of technology transfer and technology commercialization. The representative also proposed that a comprehensive assessment of the Centre be conducted covering the achievement of its objectives (effectiveness), relevance, efficiency and sustainability to formulate the next goals of the Centre. The assessment process should also ensure participation of all Governing Council member States so that they would share the same goals. Based on such an assessment, appropriate field projects could be designed.

E. Main conclusions of the discussions of the International Conference on Inclusive Science, Technology and Innovation Policies for Promoting the Transfer of New and Emerging Technologies in Water and Energy Sectors, 27 November 2018

(Agenda item 6)

35. The Chair presented the main conclusions of the discussions of the International Conference on Inclusive Science, Technology and Innovation Policies for Promoting the Transfer of New and Emerging Technologies in Water and Energy Sectors.

36. The Council noted with appreciation the Chair's summary and requested that the summary be annexed to the report of the Council on its fourteenth session.

37. The Council encouraged the secretariat to take into account the discussions and recommendations of the International Conference when developing its future work related to sustainable development.

F. Dates and venue of the fifteenth session of the Governing Council

(Agenda item 7)

38. The Council welcomed the offer made by the Government of Malaysia to host the fifteenth session of the Council during the first week of November in 2019.

G. Other matters

(Agenda item 8)

39. The Council expressed its appreciation to the Government of Thailand for hosting the fourteenth session of the Council and two related events, the International Conference on Inclusive Science, Technology and Innovation Policies for Promoting the Transfer of New and Emerging Technologies in Water and Energy Sectors, held on 27 November 2018, and study visits to Nakhon Ratchasima Province on 29 and 30 November 2018, and for the generous hospitality extended to all the representatives.

H. Adoption of the report of the Governing Council on its fourteenth session

(Agenda item 9)

40. The Council adopted the report on its fourteenth session on 29 November 2018.

III. Organization

A. Opening, duration and organization of the session

41. The Council held its fourteenth session in Bangkok on 28 and 29 November 2018. The Head of the Centre and the Director of the Trade, Investment and Innovation Division of ESCAP delivered opening addresses. Mr. Pathom Sawanpanyalert, Deputy Permanent Secretary, Ministry of Science and Technology, Thailand, delivered a keynote address.

42. The Head of the Centre welcomed the delegates to the fourteenth session of the Council. She highlighted the importance of green technologies in achieving the Sustainable Development Goals and underlined the Centre's unique mandate to support capacity-building of member States in the development, transfer and adoption of new and emerging technologies; science, technology and innovation policymaking; and technology-based start-ups and small and medium-sized enterprises.

43. The Director of the Trade, Investment and Innovation Division of ESCAP delivered a speech on behalf of the Executive Secretary of ESCAP. He highlighted that Asia and the Pacific was a region of contrast and diversity in terms of science, technology and innovation expertise. While that was a concern, it signified the importance of the work of the Centre to, among other areas, provide capacity-building support on technology transfer; and strengthen science technology and innovation policymaking. He underscored the importance of harnessing science, technology and innovation for sustainable development, in particular the new and emerging technologies, such as renewable energy, biotechnology, nanotechnology, information and communications technology and the Internet of things.

44. Mr. Pathom Sawanpanyalert commended the Centre's capacity-building support in science, technology and innovation policymaking and technology transfer. He noted that science, technology and innovation should be used not only to increase countries' competitiveness, but also to effectively enhance inclusiveness and sustainability. He stressed the importance of green technologies. He also encouraged member States to take advantage of the Centre's platform to foster regional cooperation and enhance technology transfer and commercialization capacity and expressed appreciation to the Centre for its continued collaboration with the Ministry of Science and Technology of Thailand.

B. Attendance

45. The Council session was attended by representatives of the following member States: Bangladesh; China; India; Indonesia; Iran (Islamic Republic of); Kazakhstan; Malaysia; Pakistan; Philippines; Republic of Korea; and Thailand.

C. Election of Officers

46. The Council elected the following officers:

Chair: Mr. Pathom Sawanpanyalert (Thailand)

Vice-Chair: Mr. Edgar I. Garcia (Philippines)

D. Agenda

47. The Council adopted the following agenda:

1. Opening of the session:
 - (a) Opening statements;
 - (b) Election of officers;
 - (c) Adoption of the agenda.
2. Report on the activities of the Centre during the period December 2017 to November 2018.
3. Report on the administrative and financial status of the Centre, including resource mobilization for upcoming projects/activities.
4. Presentation and discussion on the evaluation of the Centre.
5. Proposed future projects and programme of work for 2019.
6. Main conclusions of the discussions of the International Conference on Inclusive Science, Technology and Innovation Policies for Promoting the Transfer of New and Emerging Technologies in Water and Energy Sectors, 27 November 2018.
7. Dates and venue of the fifteenth session of the Governing Council.
8. Other matters.
9. Adoption of the report of the Governing Council on its fourteenth session.

Annex I

List of documents

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Annex II

Chair's summary*

Main conclusions and recommendations of the International Conference on Inclusive Science, Technology and Innovation Policies for Promoting the Transfer of New and Emerging Technologies in Water and Energy Sectors

A. General recommendations

1. The International Conference brought together 74 participants from the Centre's Governing Council member States, including government officials, science, technology and innovation professionals, international experts, and representatives from the private sector.
2. The main areas of discussions were: innovative strategies and technological solutions for sustainable water management, and challenges, opportunities and policy options for sustainable energy technologies.
3. In order to make progress towards implementing the 2030 Agenda for Sustainable Development and achieving the associated Sustainable Development Goals, member States require holistic development strategies, integrated science, technology and innovation policies, and innovative technological solutions. In particular, as inclusivity is a critical driver of sustainable growth, member States should focus on promoting inclusive science, technology and innovation policies.
4. Significant natural resource challenges persist in the region, stemming from rapid urbanization, industrialization, inadequate infrastructure, and environmental pressures. To address these challenges, ensuring the availability, accessibility, quality and sustainability of safe water and clean energy are key development agendas of many countries in Asia and the Pacific. In particular, there is an ever-increasing need to transform the way governments, industry, and communities manage these natural resources, and how innovative green technologies can be utilized to help create circular economies.
5. There is wide recognition of the benefits of multi-stakeholder dialogue and collaboration between the government, private sector, and local communities. The Conference shared best practices of collaboration, including a cooperative research network established in the Mekong region linking city planners, local communities, and agricultural community through research focal points; and the efforts of a private sector company to work with other companies, government ministries and non-governmental organizations in Thailand to develop a new funding model for commercializing the results of research and development into public goods.
6. Member States are facing many water-related challenges such as, untreated wastewater, lack of access to safe drinking water, and lack of safely managed sanitation compounded by uncertain climate factors. Therefore, innovative financing and impact investment strategies in water and sanitation must be explored.
7. Effective water policies, including comprehensive water resource planning, should consider the availability of future water resources, plan for action to address the effects of climate change, support stable supply of water at acceptable quality, and foster international cooperation. It was observed that in

* The present annex is being issued without formal editing.

the case of the Four Major Rivers Project in The Republic of Korea, many key water policies and institutions were outdated and not effectively or equitably implemented or enforced. In this regard, there was a need for increased capacity development and fiscal reforms to support policymaking and investment.

8. In order to achieve the necessary scale of required actions and deployment of technologies to address water related issues there is a need for a shift in thinking from fragmented or project approaches to more holistic and integrated approaches that consider business models and opportunities, fiscal and institutional needs, and broader development strategies.

9. In order to adequately utilize green technology, policymakers must work with local communities in order to identify problems and develop sustainable solutions. For example, a multi-stakeholder planning approach to water management projects has been deployed in Pakistan and Cambodia in partnership with the Stockholm Environment Institute. The projects involve policy planners, engineers, and social scientists (rather than only hydro-engineering experts) in the planning process in order to address the many dimensions of water security, covering social, economic, environment and institutional issues.

10. There is a need for inclusive governance that promotes working with individuals as well as institutions, and links start-ups with government, institutions, universities and non-government organizations, to effectively address the issues related to sustainable water management. Many technological solutions can be brought forward and mainstreamed through more collaborative efforts.

11. Promoting energy transition is one of the key elements to achieve Sustainable Development Goal 7 in the region. A sustainable energy transition entails the principles of decarbonization, less pollution, digitization, sustainability, decentralization and higher efficiency through enhanced use of renewables, advanced energy efficiency, energy Internet of things, and international cooperation. The Sustainable Development Goal 7 targets ensure universal access to affordable, reliable and modern energy services; increase substantially the share of renewable energy in the global energy mix; and double the global rate of improvement in energy efficiency. The main challenges in the region are lack of effective access to clean cooking, and availability of electricity and renewable energy. In this context, national policies should align better with Sustainable Development Goal 7 in order to address accessibility and affordability challenges, increase financing for energy transition and improve regional cooperation.

12. The use of biomass energy has great potential to contribute to improving energy security, leveraging technology advances, improving waste management and mitigating climate change. A case study from Thailand showed that increasing the share of biomass energy through its Alternative Energy Development Plan (2015-2036) has successfully decreased the country's energy imports and carbon dioxide emissions. There is a need to secure availability, standardization, production and utilization of biomass resources in order to harness their full potential.

13. The ASEAN Network of Excellence Centre of Biomass Conversion Technology is a platform for sharing biomass infrastructure, biomass conversion technology, and technology transfer.

14. The private sector is in a strong position to promote renewable energy and needs to be encouraged and supported by stable and tangible policies. Governments should also encourage public-private partnership for promoting renewable energy.

15. The role of international cooperation, including exchange of knowledge and best practices, is crucial for promoting technology transfer in water and energy sectors. For example, Kazakhstan and Kyrgyzstan have been building on existing procedures and protocols for data exchange with the goal of making water monitoring and management more efficient and sustainable, while still satisfying requirements for compliance with international standards and national regulations. China and United Nations Environment Programme implemented a China-United Nations Environment Programme-Africa Science and Technology Cooperation Action Plan on water resources in African countries.

B. Specific Recommendations for Asian and Pacific Centre for Transfer of Technology:

16. The Centre may facilitate effective knowledge sharing of best practices and technological innovations in order to further support and promote transfer of successful technologies across the region.

17. The Centre may provide research and analysis support to member States for evidence-based and inclusive multi-stakeholder participatory planning processes. It should provide robust decision-making support by identifying key water problems and clarifying goals and strategies that address the specific contexts of different communities.

18. The Centre may provide assistance and support for capacity building and academic research in the areas of development, transfer, utilization and management of renewable energy technologies, through the organization of expert group meetings, conducting and supporting research on critical issues related to renewable energy, sharing of successful examples and best practices from developed countries, and dissemination of renewable energy technology information.

19. The Centre may support capacity building activities for the private sector, particularly for small and medium-sized enterprises and project managers for transfer of renewable energy technologies.

Annex III

Programme of work of the Asian and Pacific Centre for Transfer of Technology for 2019*

I. Introduction

1. The programme of work for Asian and Pacific Centre for Transfer of Technology is aligned with the work programme of ESCAP subprogramme 2, Trade, Investment and Innovation Division of ESCAP. The following projects and programme of work are proposed for implementation in 2019.

A. Project on “Strengthening the National Innovation System of ESCAP member States with special focus on technology transfers and deployment of technology innovations” *(ongoing)*

2. The project is funded by the annual contributions received from the APCTT Governing Council member states for the biennium 2018-2019.

3. The objectives of the project are to increase the capacity of science, technology and innovation policymakers and key stakeholders in ESCAP member countries on the following areas: improving access to knowledge and information on new technological innovations; enhancing skill and capability in science, technology and innovation policy making; development of strategies for technology transfer and commercialization, promoting the adoption and use of new and emerging technologies; encouraging technology-based entrepreneurship; and promoting regional cooperation.

4. The project also supports production of the Centre’s regular web-based publication, namely the Asia-Pacific Tech Monitor.

B. Project on “South-South Cooperation for Science, Technology and Innovation Policies in the Asia-Pacific Region” *(ongoing)*

5. The project is funded by the United Nations Development Account (10th tranche) being jointly implemented by Trade Investment and Innovation Division and the Centre during the period 2016-2019.

6. The project aims to develop the capacity and capability of policymakers to effectively develop and implement policies and strategies to create an enabling environment for investment, social enterprise and responsible business and provide a framework for monitoring and measuring the effectiveness of policy interventions to catalyze innovation for sustainable development.

7. Under this project, the Centre plans to organize a high-level Innovation Forum in the Islamic Republic of Iran on themes related to technology-based start-ups. The Centre also plan to facilitate establishment of a regional start-up network to promote technology-based start-ups in the member States. The network aims at providing critical support to the technology-based start-ups in technology transfer and commercialization, capacity-building, cross-border technology collaboration and sharing of experience and best practices.

* The present annex is being issued without formal editing.

C. Project on “Evidence-based innovation policy for effective implementation of 2030 Agenda for Sustainable Development in the Asia-Pacific region” *(ongoing)*

8. The project is funded by the United Nations Development Account (11th tranche). This project is jointly implemented by Trade Investment and Innovation Division and the Centre during the period 2018 to 2021.

9. The main objective of the project is to strengthen the capacity of developing countries, in particular the least developed countries in South Asia, South-East Asia and the Small island developing States in the Pacific, to formulate evidence-based, integrated and inclusive innovation and technology policies. Through such policies the countries should be able to use science, technology and innovations as effective means of implementation for the achievement of the Sustainable Development Goals.

D. Project on “Promotion of Regional Cooperation between India and ESCAP member States to Strengthen National Innovation Systems” *(ongoing)*

10. The project is financed by the residual fund of the completed Government of India funded project: “Promotion of National Innovation Systems in countries of the Asia Pacific region” - Phase II.

11. The project will assist participation of the stakeholders from target countries to the Centre’s events on science, technology and innovation policy, technology transfer, technology-based entrepreneurship and new and emerging technologies for the achievement of Sustainable Development Goals 9 (Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation) and Infrastructure) and 17 (Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development).

Annex IV

Financial statement of the Asian and Pacific Centre of Transfer of Technology for the year ended 31 December 2018 (United States dollars)

<i>Income</i>	
Contributions	364 392
Interest income	24 032
Exchange difference	365
Total income	388 788
<i>Less: Expenditure</i>	
	(373 477)
Net income over expenditure	15 311
Fund balance as at 1 January 2018	1 089 506
Refunds to donors/fund transfer	-
Fund balance as at 31 December 2018	1 104 818

Annex V

**Financial statement of the Asian and Pacific Centre for Transfer of Technology for the year ended 31 December 2018,
by project component**
(United States dollars)

	<i>Institutional support (multi-donors)</i>	<i>Institutional support funded by the Government of India</i>	<i>Past technical cooperation project funded by the Government of India^a</i>	<i>Promotion of regional cooperation among ESCAP member States to strengthen the national innovation system^b</i>	<i>Strengthening the national innovation system of ESCAP member States with special focus on technology transfers and deployment of technology innovations (multi-donors)</i>		<i>Total</i>
					<i>2016–2017</i>	<i>2018–2019</i>	
<i>Income</i>							
Contributions	162 647	201 745	-	-	-	-	364 392
Interest income	14 208	3 365	-	329	3 666	2 463	24 032
Exchange difference	280	85	-	-	-	-	365
Total income	177 135	205 195	-	329	3 666	2 463	388 788
<i>Less: Expenditure</i>							
	(60 209)	(261 541)	(53)	(2 142)	360	(49 892)	(373 477)
Net income over expenditure	116 926	(56 346)	(53)	(1 813)	4 027	(47 429)	15 311
Fund balance as at 1 January 2018	726 129	174 511	16 113	-	172 754	-	1 089 506
Refunds to donors/fund transfer	(257 136)	-	(16 059)	16 059	-	257 136	-
Fund balance as at 31 December 2018	585 919	118 165	-	14 247	176 780	209 707	1 104 818

^a The national innovation system project funded by the Government of India was fully implemented in 2016.

^b Funds transferred from the closed national innovation system project.

Annex VI**Cash contributions received for the year ended 31 December 2018**
(United States dollars)

<i>Country/area</i>	<i>Year ended 31 December 2018</i>	<i>Year ended 31 December 2017</i>
Host country		
India	201 745	198 588
Other countries/areas		
Bangladesh	7 000	-
China	30 870	29 935
Fiji	-	-
Indonesia	10 000	10 000
Iran (Islamic Republic of)	-	-
Kazakhstan	-	-
Macao, China	5 000	5 000
Malaysia	15 000	15 000
Pakistan	6 941	7 469
Philippines	30 000	120 000
Republic of Korea	27 837	35 435
Sri Lanka	5 000	5 000
Thailand	15 000	15 000
Viet Nam	10 000	10 000
Total	364 392	451 426